REMARKS

Claims 1-4 are pending. Applicants respectfully submit no new matter is presented.

Claims 1-4 Recite Patentable Subject Matter

Claim 1 is rejected under 35 U.S.C. §103(a) as being unpatentable over U.S. Patent No. 6,374,972 to Yoshimoto et al. (hereinafter "Yoshimoto") in view of U.S. Patent No. 5,999,873 to Minowa et al. ("Minowa"). Claims 2-4 are rejected under 35 U.S.C. §103(a) as being unpatentable over Yoshimoto in view of Minowa as applied to Claim 1 above, and further in view of U.S. Patent No. 3,797,243 to Trusov. Applicants respectfully traverse both rejections.

Claim 1 recites a power transmission device for an astride-riding vehicle including, among other features, that a pump capacity is a maximum at a speed ratio (e) = 0, and gradually decreases in response to an increase in the speed ratio (e).

The Office Action admits Yoshimoto fails to teach or suggest such a feature. That is, the Office Action admits Yoshimoto does not disclose that the pump capacity of the torque converter is a maximum at a speed ratio equal to zero (0), decreasing in response to an increase in speed ratio.

The Office Action then asserts that Minowa discloses a torque converter wherein a capacity is a maximum at a speed ratio equal to zero (0) as shown in Figure 9 and decreases as the speed ratio increases to provide improved torque efficiency. The Office Action further asserts it would have been obvious to one of ordinary skill in the art to use the torque converter configuration of Minowa in Yoshimoto to improve torque converter efficiency.

Applicants respectfully, but forcefully, disagree with the assertions made by the Office Action with regards to the Minowa disclosure.

Applicants respectfully submit the Office Action is erroneously basing the assertions on values of the *product* of pump capacity coefficient c and torque ratio t versus the speed ratio e illustrated in Figure 9 when the proper comparison or value to be obtained is where the speed ratio e is compared in a graph **only** with the pump capacity coefficient. Applicants note Figures 4 and 7 of Minowa, which appear to be overlooked by the Office Action, are graphs illustrating a comparison of only the pump capacity coefficient and the speed ratio.

Applicants respectfully note Figure 9 of Minowa is a graph showing a comparison between measured values and approximate values in the characteristic of a pump capacity coefficient and torque product (c x t) compared to a speed ratio (e). In other words, the graph plots the values of the *product* of **c x t** vs. e, the graph of Figure 9 does <u>not</u> provide a value of pump capacity **only** versus the speed ratio.

Applicants respectfully note that Minowa explains that conventional torque estimating methods estimate the output shaft torque of a torque converter by using rotating speeds of input and output shafts of the torque converter and characteristics of the torque converter. The torque converter characteristics are <u>a pump capacity coefficient and a torque ratio</u>. Typically, data of the pump capacity coefficient and data of the torque ratio are separately stored in the form of data table in a memory provided in a control device, as functions of a speed ratio which is a ratio between the rotating speeds of the input and output shafts of the torque converter. See column 1, lines 20-34 of Minowa.

Minowa further states that data for the pump capacity coefficient and the torque ratio *product*, **c x t**, are obtained by multiplying the pump capacity coefficient c and the torque ratio t of the torque converter and for retrieving or computing a value of the *product*, **c×t**, corresponding to a value of the speed ratio computed above, and apparatus for computing an output shaft torque of the torque converter by using the value of the *product*, **c×t**, obtained above. See the paragraph bridging columns 1-2 of Minowa. Based on the above, Applicants respectfully submit that the values illustrated in the vertical axis of Figure 9 are the values of the product of the pump capacity coefficient times (or multiplied with) the torque ratio and not simply pump capacity. For example, Minowa further explains that the storing and computing apparatus storing data of a pump capacity coefficient and torque ratio *product*, **c×t**, retrieves a value of the *product*, **c×t**, corresponding to a value of the speed ratio obtained above. The torque converter output shaft torque computing apparatus then computes a torque converter output shaft torque by using the value of the *product*, **c×t**, obtained above and the torque converter input shaft rotating speed obtained above. The storing and computing apparatus stores data of the pump capacity coefficient and torque ratio *product*, **c×t**, rather than separately storing data of a pump capacity c and data of a torque ratio t which are functions of the speed ratio. See column 2, lines 15-29 of Minowa.

Applicants respectfully note that when Minowa does provide a graph showing **only** the pump capacity coefficient c versus the speed ration e, as in Figures 4 and 7, Minowa clearly and unambiguously shows the pump capacity coefficient is **not** a maximum when the speed ratio equals zero (0). Rather, as shown in Figure 7 of Minowa, the pump capacity coefficient actually is a maximum at approximately 0.4

before gradually decreasing thereafter in response to an increase in the speed ratio. In fact, Applicants respectfully point out that the pump capacity coefficient disclosed by Minowa _increases_ from the point where the speed ratio is zero (0) to the point where the speed ratio is approximately 0.4 where the pump capacity coefficient attains a maximum and then begins the gradual decrease in response to the increase in the speed ratio. See Figure 7 of Minowa.

As such, Applicants respectfully submit Minowa does not teach or suggest the pump capacity coefficient is a maximum at a speed ratio equal to zero (0). Moreover, Applicants respectfully submit that Minowa does not teach or suggest the pump capacity coefficient gradually decreases in response to an increase in the speed ratio after zero (0) since Minowa clearly teaches the pump capacity coefficient increases once the speed ratio increases from zero (0) to a point where when the speed ratio achieve approximately 0.4, that the pump capacity coefficient then begins to gradually decrease.

Although Applicants have been discussing the pump capacity coefficient c taught by Minowa as if the feature is the same as the pump capacity feature recited by Claim 1, Applicants reserve the right to present arguments that distinguish the two features, i.e., reserve the right to argue the two features are not the same or equivalent if necessary at a later date.

Applicants respectfully note Trusov does not teach or suggest a pump capacity being a maximum at a speed ratio (e) = zero (0) and gradually decreases in response to an increase in the speed ratio (e).

Put simply, Yoshimoto, Minowa, and Trusov, alone and/or in combination, fail to teach or suggest each and every feature recited by Claim 1.

To establish *prima facie* obviousness, each feature of a rejected claim must be taught or suggested by the applied art of record. See M.P.E.P. §2143.03. As explained above, Yoshimoto, Minowa, and Trusov, alone or in combination, fail to teach or suggest each and every feature recited by Claim 1. As such, Applicants respectfully submit Claim 1 is not rendered obvious by the teachings of Yoshimoto, Minowa, and Trusov and should be deemed allowable.

Claims 2-4 depend from Claim 1. It is respectfully submitted that these three (3) dependent claims be deemed allowable for the reasons Claim 1 is allowable as well as for the additional subject matter recited therein.

Applicants respectfully request withdrawal of both rejections.

Conclusion

In view of the foregoing, reconsideration of the application, withdrawal of the outstanding rejections, allowance of the Claims 1-4, and the prompt issuance of a Notice of Allowability are respectfully solicited.

Should the Examiner believe anything further is desirable in order to place this application in better condition for allowance, the Examiner is requested to contact the undersigned at the telephone number listed below.

In the event this paper is not considered to be timely filed, the Applicants respectfully petition for an appropriate extension of time. Any fees for such an extension, together with any additional fees that may be due with respect to this paper, may be charged to counsel's Deposit Account No. 01-2300, **referencing docket number 107348-00382**.

Respectfully submitted,
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